

URS OPERATING SERVICES

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August 18, 2011

Ms. Sabrina Forrest
U.S. Environmental Protection Agency, Region 8
Mail Code: 8EPR-B
1595 Wynkoop Street
Denver, Colorado 80202-1129

**SUBJECT: START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1008-13
Addendum to the approved Field Sampling Plan-Supplemental Sampling
Upper Animas Mining District, Silverton, San Juan County, Colorado**

Dear Ms. Forrest:

Attached is the final Supplemental Field Sampling Plan (FSP) for the Upper Animas Mining District Site Reassessment. The sampling will include the collection of at least one sample from the waste pile at the Gold King Level 7 mine located north of Silverton, Colorado.


Field sample collection, sample handling, sample shipping, and documentation of sampling activities will follow the procedures in the Approved Field Sampling Plan for this project.

This document is submitted for your approval.

If you have any questions, please call me at 303-291-8270.

Sincerely,


URS OPERATING SERVICES, INC.


Barry Hayhurst
Project Manager

cc: Charles W. Baker/UOS (w/o attachment)
File/UOS

EPA ACTION BLOCK

- ☐ Approved
- ☐ Approved, TDD to follow
- ☒ Approved as corrected
- ☐ Disapproved
- ☐ Review with _____
- ☐ Original to _____
- ☐ Copy to _____
- ☐ Reply envelope enclosed

08/31/11 
Date By

**Supplemental Field Sampling Plan
Upper Animas Mining District
Silverton, San Juan County, Colorado**

1.0 INTRODUCTION

URS Operating Services, Inc. (UOS), has been tasked by the Environmental Protection Agency (EPA), under Superfund Technical Assessment and Response Team 3 (START) contract # EP-W-05-050, Technical Direction Document (TDD) No. 1008-13, to conduct a site reassessment (SR) at the Upper Animas Mining District site. Field activities will be completed in accordance with the approved Field Sampling Plan (FSP) (UOS 2010). During this field sampling event four source soil sample (with a matrix spike/matrix spike duplicate [MS/MSD] sample) will be collected to characterize the waste pile at the Gold King Level 7 Mine. Field sample collections and analytical procedures will duplicate the procedures in the approved 2010 FSP (UOS 2010).

2.0 BACKGROUND

Mines in the Silverton area operated between the years 1874 and 1991. Mining activities in the Upper Animas basin, including Cement Creek, produced the waste rock and mill tailings sources from which contamination spread throughout the surface water pathway. During the 2010 field work for this investigation, access was not available for the waste rock pile at the Gold King Level 7 Mine. Access is now available and this plan describes the sample collection and analysis plan for collecting that sample. The approved FSP contains location and description information for the Gold King Level 7 Mine (UOS 2010).

3.0 SAMPLING PROCEDUES

START will collect approximately 12 in situ x-ray fluorescence (XRF) readings of the Gold King Level 7 Mine waste pile to document the homogeneity of the waste rock pile. If the in situ readings vary by more than 25 percent, then an attempt will be made to segregate the waste pile into different parts for additional samples. The field XRF analysis will evaluate arsenic, cadmium, and lead.

At each of the field XRF sample locations a shovel will be used to remove the top 6 inches of oxidized material to expose unoxidized material. A plastic seal-top bag will be placed over the in situ waste material and the x-rays shot through the plastic shield.

The source/waste rock sample will be collected in accordance with procedures described in UOS TSOP 4.16, "Surface and Shallow Depth Soil Sampling" (UOS 2005). Dedicated, disposable plastic scoops will be used for source sample collection. All source samples will be collected as biased grab samples from the 6- to 12-inch depth interval. A sharp shooter shovel will be used to accomplish the depth needed for the sample and will be decontaminated between samples. Soil samples for total metals analysis will be placed in 8-ounce high density polyethylene (HDPE) jars.

The first sample will be numbered UASO15, and additional samples will sequentially increase in number.

4.0 ANALYTICAL PROCEDURES

In situ field XRF analysis will be conducted using an Innovex Omega portable XRF unit.

Laboratory analysis will be performed at an EPA Contract Laboratory Program (CLP) laboratory for Target Analyte List (TAL) Total Metals using method SOM01.2 via ICR-AES. This is the same method used in the 2010 investigation (UOS 2010). A 1-week turnaround for the analysis will be requested.

5.0 ADDITIONAL NON-SAMPLING DATA COLLECTION ACTIVITIES

Additional field activities that will be conducted include:

- Measurement of the area and volume of the Gold King Level 7 Mine waste rock pile;
- Characterization of waste rock piles at the Grand Mogul, Mogul, Red and Bonita, and Gold King 7 Level mines to determine if similar mineralogy is present in all waste rock piles;
- Obtaining access information to properties where wetlands and sensitive environments are found;
- Delineation of wetlands and identification and characterization of sensitive environments along Cement Creek from the Grand Mogul Mine downstream to Ohio Gulch;
- Identification and documentation of recreational sports fishing and consumption of fish caught in the Animas River downstream of the confluence with Cement Creek; and
- Detailed documentation of the surface water pathways from the identified sources to Cement Creek and the potential points of entry (PPEs) into Cement Creek.

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6.0 REPORTING

The analytical data will be validated and a letter report detailing the results prepared within 1 week of data validation.

7.0 LIST OF REFERENCES

URS Operating Services, Inc. (UOS). 2005. "Technical Standard Operating Procedures for the Superfund Technical Assessment and Response Team (START), EPA Region 8."

URS Operating Services, Inc. (UOS). 2010. "Field Sampling Plan: Upper Animas Mining District San Juan County Colorado." October 21, 2010.